

REMARKS

The Examiner rejected claims 1-18 under 35 U.S.C. §112 as failing to comply with the written description requirement. Applicant has amended claim 1 to comply with the disclosure that the Examiner indicated is present, i.e., "a particular way the continuous glass fibers are oriented." The glass fibers are claimed as having a particular orientation that is not random. Although the Examiner stated that the claim limitation of "non-random" is broader than the disclosure of a particular fiber orientation, Applicant points out that a disclosure of one fiber orientation that is not random clearly discloses the previously claimed "non-random" fiber orientation. Thus, the disclosure supports Applicant's claim limitation of non-random glass fiber orientation. Nonetheless, Applicant has attempted to more carefully tailor the claim language to the Examiner's language. Thus, this rejection is overcome.

The Examiner rejected claims 1-18 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,931,358 to Wahl et al. Applicant has amended independent claims 1 and 11, and dependent claim 9. All of the claims are now allowable.

In the preferred embodiment of Applicant's invention, after the glass fiber mat is formed to have a particular orientation that is not random, a layer of polypropylene fibers is applied to the mat. The polypropylene fibers will eventually be melted to flow around the reinforcing glass fibers to form the matrix of the composite. The polypropylene fibers form the only matrix material in the resulting composite.

In contrast, the structure of the Wahl patent is formed from thermoplastic fibers, reinforcing fibers and a layer of "molten thermoplastic resin" (see Wahl at column 1, lines

27-30). Thus, the matrix material of the resulting composite in Wahl is from the fibers and the molten thermoplastic layer (or, alternatively, from a plastic film, which is also not a fiber configuration – see column 2, lines 31-33). This is a different method from Applicant's. Thus, Wahl does not anticipate the invention, and the amended claims are allowable.

The Examiner also rejected claims 1-18 under 35 U.S.C. §103(a) as being unpatentable over Wahl et al. in view of U.S. Patent No. 5,667,882 to Fourezon et al. In light of the amendments to the claims, these claims are allowable.

As described above, Applicant's mixed fiber mat has glass fibers intertwined with thermoplastic fibers, such as polypropylene. Fourezon teaches polypropylene fibers combined with randomly oriented glass fibers, but does not teach any particular orientation of the glass fibers. Wahl teaches parallel orientation of the glass fibers, but also teaches to place another layer of thermoplastic film or molten thermoplastic between the fiber layers.

The claimed invention would not have been obvious from Fourezon and Wahl, because there is no suggestion in the prior art to make the combination claimed, and there are ~~no~~ teachings away from limitations in the invention. First, Fourezon teaches away from particularly oriented glass fibers by teaching to use randomly oriented glass fibers that provide the same reinforcement in every direction. Applicant goes against this.

Second, Wahl teaches to use a thermoplastic film or molten layer in addition to thermoplastic fibers as the matrix material. Applicant claims that only thermoplastic fibers make up the matrix material in the resulting composite. The advantage of thermoplastic fibers only is the enhanced flow of the fibers forming the composite's matrix due to

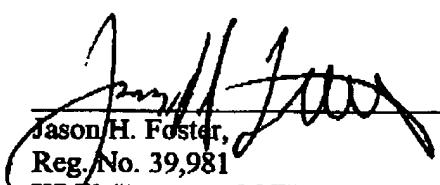
intertwining of the two kinds of fibers, and the elimination of a step over Wahl. The step of inserting the molten thermoplastic layer or film increases the cost and complexity of the process. Because of this, it would not have been obvious to arrive at Applicant's claimed invention, and the amended claims are allowable under § 103.

Therefore, reconsideration and allowance are respectfully requested. The Commissioner is authorized to charge Deposit Account No. 13-3393 for any insufficient fees under 37 CFR §§ 1.16 or 1.17, or credit any overpayment of fees.

Respectfully submitted,

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Date of Signature



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